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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/857,171	06/15/2001	Hwee Hwa Pang	P21105	6020

7055 7590 05/20/2004

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EXAMINER

LAO, SUE X

ART UNIT	PAPER NUMBER
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2126

DATE MAILED: 05/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/857,171

Applicant(s)

PANG ET AL.

Examiner

S. Lao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3,6,7.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

1. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 1-22 are presented for examination. This action is in response to the preliminary amendment filed 6/15/2001. Applicant has amended claims 3, 6-8, 10, 11, 13, 16-18, 20 and 21.

3. The disclosure is objected to. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (e) BACKGROUND OF THE INVENTION.

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(1) Field of the Invention.

(2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.

(f) BRIEF SUMMARY OF THE INVENTION.

(g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).

(h) DETAILED DESCRIPTION OF THE INVENTION.

(i) CLAIM OR CLAIMS (commencing on a separate sheet).

(j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

(k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 10, 12, 20, 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 10 recites "said second process" in line 3. There is insufficient antecedent basis for this limitation in the claim. For the purpose of art rejection, it is interpreted as "said second sub-process", as best understood and as it appears to be.

Claim 12 recites "wherein said first process discards extraneous data, program codes and execution states acquired subsequent to the formation of said first process and said sub-process prior to adding said first process to said sub-process", which is confusing and lacks antecedent basis for the limitation "adding said first process to said sub-process" in the claim.

Claims 20, 22 correspond to claims 10, 12, respectively.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious

at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over La Porta et al (U S Pat. 6,085,086).

As to claim 1, La Porta teaches a method for removing (core dump and transfer) a part (core portion) of a computing process (user process), wherein the process includes a first process (executable portion) and a second sub-process (core portion), the second sub-process comprising items of data and/or program code and/or execution states of the computing process (user area, stack and data storage) not required by the first process [it is noted that the core portion is not required by the user process while migrating.]. See col. 8, lines 23-63.

While La Porta teaches that the process (user process) includes the first process (executable portion) and the second sub-process (core portion) which are formed during migration (core is dumped, transferred and rejoined, col. 8, lines 47-56; fig. 7A, 8), La Porta does not explicitly teach using a splitting step to form the first process and the second sub-process. However, La Porta teaches using a splitting step to form a sub-process to hold data related to the user process (fork off a child stub process to hold messages sent to the user process, col. 8, lines 44-46). Therefore, it would have been obvious to also use a splitting step to form the first process and the second sub-process in La Porta.

As to claim 2, La Porta teaches the sub process comprises items of data (data storage) and execution state (stack) of the computing process. It is noted that a core dump typically includes program code (code executed up to the point of dump), a well known example of which can be found in UNIX.

8. Claims 3-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over La Porta et al as applied to claim 1 in view of Apple Computers (Technical Introduction to the Macintosh Family).

As to claim 3, La Porta teaches the first process retains the process identity of the computing process in that they are both addressed as user process.

La Porta does not teach forming a construct to store the sub-process.

Apple teaches (pages 135-145) splitting a process (application) into a first process (data fork) and a second sub-process (resource fork holding resources), wherein a construct (resource fork including resource map and resource data) is formed to store the sub-process. See pages 135-136.

Therefore, it would have been obvious to form a construct to store the sub-process in La Porta. One of ordinary skill in the art would have been motivated to combine the teachings of La Porta and Apple because this would have provided more efficient management of the data/resource contained in the second sub-process using the resource tools of Apple (pages 143-145).

As to claim 4, La Porta teaches creating a new sub-process comprising at least some of the data and/or program modules and/or execution state of the computing process (La Porta, user area, stack and data storage), and stores the sub-process in a data area of the computing process (core, see discussion of claim 1). As to suspending all active threads, this is a typical step [also called freeze] taken before core dump.

As to claim 5, La Porta as modified teaches (Apple) the construct comprises only data, program modules and execution state falling within lists (resource index) that are passed to the construct operation (pages 135-136).

As to claim 6, La Porta as modified teaches (Apple) authorising signature (protected resources, page 138). Note discussion of claim 3 for a motivation to combine.

As to claim 7, La Porta teaches the construct is sent to a memory storage device (checkpointed, col. 8, lines 23-37).

As to claim 8, La Porta teaches the sub-process (core portion) is a dormant process comprising data, program code and execution states of the computing process (core) temporarily not required by the first process [it is noted the core portion is not required by the user process while migrating. See discussion of claim 1]. La Porta further teaches the first process is able to re-acquire data, program codes and

execution states from the dormant process as and when required by the first process (create the new user process using the core data, col. 8, lines 50-56).

As to claim 9, La Porta as modified teaches the first process re-acquires data, program code and execution states from the dormant process (create the new user process using the core data, col. 8, lines 50-56) desirable to the first process / user process. Specifying ranges of desired data is taught by Apple (resource index). Note discussion of claim 3 for a motivation to combine.

As to claim 10, La Porta teaches the sub-process comprises data, program code and execution states specific to a given user in that the core portion is specific to the user process 20. See discussion of claim 1. La Porta further teaches the second process is formed to temporarily store the data, program code and execution states while the user is absent from the computing means in that the core dump, transfer and rejoin process of La Porta is performed while the user process is migrating which is a temporary action and user is absent / not computing.

As to claim 11, La Porta teaches after the first process finishes executing data, program modules and execution states from the first process are added to the sub-process (dump core, col. 8, lines 47-49) and the sub-process is reactivated (rejoin with the executable, col.8, lines 53-56).

As to claim 12, the purpose of core portion in La Porta is to store and transfer data relevant to the execution of the user process. The extraneous data, program codes and execution states acquired subsequent to the formation of the first process and the sub-process prior to adding the first process to the sub-process represent data not relevant to the execution of the user process because the relevant data is added/saved by the user process / first process after its execution. Therefore, it would have been obvious to discard such non-relevant data for the purpose of reducing network traffic.

As to claim 13, La Porta teaches a construct (core portion) is formed for storing the sub-process [see discussion of claim 1], while the first process is run in place of the computing process (parent user process exist and new user process is created to continue computation, col. 8, lines 48-56).

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As to claim 14, it is covered by claim 4 except for data area of the first process which is met by La Porta (core portion of user process).

As to claims 15-22, these claims are presented in claims 5-22, respectively. Thus note claims 5-12, respectively, for discussions.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sue Lao whose telephone number is (703) 305-9657. A voice mail service is also available at this number. The examiner's supervisor, SPE Meng-Ai An, can be reached on (703) 305 9678. The examiner can normally be reached on Monday - Friday, from 9AM to 5PM. The fax phone number for the organization where this application or proceeding is assigned is (703) 872 9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-9600.

Sue Lao 

May 14, 2004